



# Best Management Practices for Construction and Development Projects Greater Prairie-chicken *Tympanuchus cupido*

**Common name** • Greater Prairie-chicken  
**Scientific name** • *Tympanuchus cupido*  
**Federal status** • None  
**State status** • Endangered

## Purpose and Use

The information in this document is to be used to help avoid and minimize species impacts due to construction practices. It is not intended to be used as a guide to manage habitat for a given species. If that is the goal, please contact the Department of Conservation for habitat management information. Because every project and location differs, following the recommendations within this document does not ensure that impacts will not occur to the species and additional information might be required in certain instances. Following the recommendations within this document does not complete Endangered Species Act consultation that may be necessary for species listed under the federal Endangered Species Act; please contact the U.S. Fish and Wildlife Service for more information.

## Ecology

Greater Prairie-chickens once ranged throughout native prairies in central North America, from southern Canada to Texas. In Missouri, they historically occupied vast Tallgrass prairies. Due to habitat destruction and fragmentation, Greater Prairie-chickens now inhabit only a handful of grassland-dominated landscapes in northern Missouri and the Osage Plains. Each spring, males gather on booming grounds, an area of higher elevation, where males compete for dominance and display to visiting females. Peak mating activity occurs in late March and early April. Females establish a nest within a few miles of a lek in open grasslands that have moderate horizontal and vertical cover, 9-17 inches in height. Males provide no parental care. Females lay only one clutch of eggs unless the nest is destroyed. Renesting may occur as late as the end of June. Eggs are incubated for 23-25 days. Broods disband by mid-August or when the young are approximately 80 days old. Greater Prairie-chickens forage on the ground for insects, succulent green leaves and seeds of native plants or waste grain.

## Reasons for Decline

The distribution of the Greater Prairie-chicken diminished as prairie and certain more favorable cool-season grasses were converted to cropland or tall fescue, and as trees and manmade structures fragmented remaining grasslands. Native Tallgrass

prairie once covered 34 percent of Missouri but now occupies less than 0.5 percent of the land. Habitat alteration is the primary cause of Greater Prairie-chicken decline. Fragmentation of remaining grasslands increases the impact of predation by mammals and raptors. Competition and nest parasitism by Ring-necked Pheasants (*Phasianus colchicus*) have been observed to further reduce populations.

## Specific Recommendations

Greater Prairie-chickens need large tracts of suitable grasslands for nesting, brood-rearing and roosting. At least 2,000 acres of properly managed grassland is needed to sustain viable populations.

- Native prairie is a rare and precious resource which should not be destroyed. Avoid further fragmentation and conversion of native prairies and grasslands where greater prairie-chickens still occur.
- Do not place tall structures including towers, poles, tanks and buildings in open grasslands.
- Reseed disturbed areas and renovate tall fescue pastures with a diverse mix of native warm-season grasses and forbs, or with wildlife-friendly cool-season grasses such as redtop, timothy or smooth brome, mixed with legumes.

If the project area includes areas that can be managed for grasslands, the following activities could benefit the greater prairie-chicken:

- Graze moderately and maintain uneven, patchy cover to create brooding habitat adjacent to nesting sites. Do not mow pastures to a uniformly short height.
- Hay prairies and grasslands after July 31; a cutting height of 3-4" gives late-nesting birds a chance to rear young. The attachment of a flushing bar to mowing equipment is recommended. Avoid storing hay bales near leks or in fields where birds may feed, as these can serve as predator dens and strike points.
- Mow idle native warm season grasses at a height of 10-17" after frost to create ideal nesting habitat for the following spring.
- Burn fields to control woody plants and remove heavy litter on a three-five year rotation; burn before March 15 or after July 31.
- Maintain blocks of grassland >10 acres in size and 10-17" in height at the end of the growing season to provide nesting cover the following spring. Avoid leaving narrow, linear strips which are easily searched by predators.

- Avoid using herbicides and insecticides during the breeding and nesting seasons (March 1- July 31) to avoid depleting essential insect prey and other food resources
- Fence collisions pose a significant risk. Remove unnecessary fences, and construct new fences to be <44" tall. Marking fences every 3' can help reduce the potential for collisions.
- Cut all trees taller than 15' from intended prairie-chicken habitat; immediately treat cut stumps with herbicide to avoid resprouting. Burn cut trees and spread soil from dozer piles to avoid creating predator den sites.
- Retain dense patches of grass near cropland and heavily grazed pasture to provide escape and thermal cover.
- Small (25'x25') colonies or clumps of short-growing, native shrubs comprising <5% of the landscape provide thermal and predator escape cover.

## General Recommendations

If your project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or [www.modot.mo.gov/ehp/index.htm](http://www.modot.mo.gov/ehp/index.htm) for additional information on recommendations.

## Information Contacts

For further information regarding regulations for development near prairies, contact:

For species information:

[Missouri Department of Conservation](#)  
Resource Science Division  
P.O. Box 180  
2901 W. Truman Blvd  
Jefferson City, MO 65102-0180  
Telephone: 573/751-4115

For species information and Endangered Species Act Coordination:

[U.S. Fish and Wildlife Service](#)  
Ecological Services  
101 Park Deville Drive, Suite A  
Columbia, MO 65203-0007  
Telephone: 573/234-2132

For Clean Water Act Coordination:

[Missouri Department of Natural Resources](#)  
Water Protection Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
Telephone: 573/751-1300, 800/361-4827

[U.S. Army Corps of Engineers](#)  
Regulatory Branch

700 Federal Building  
Kansas City, MO 64106-2896  
Telephone: 816/983-3990

[U.S. Environmental Protection Agency](#)  
Water, Wetlands, and Pesticides Division  
901 North 5th Street  
Kansas City, KS 66101  
Telephone: 913/551-7307

## Disclaimer

These Best Management Practices were prepared by the Missouri Department of Conservation with assistance from state and federal agencies, contractors and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat. Compliance with these Best Management Practices is not required by the Missouri wildlife and forestry law nor by any regulation of the Missouri Conservation Commission. Other federal laws such as the Clean Water Act and the Endangered Species Act, and state or local laws need to be considered for construction and development projects, and require permits and/or consultation with the appropriate agency. Following the recommendations provided in this document will help reduce and avoid project impacts to the species, but impacts may still occur. Please contact the appropriate agency for further coordination and to complete compliance requirements.